IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.	:	09/674,771	Confirmation No. 3714
Applicant	:	Rudolf Heinz et al.	
Filed	:	December 29, 2000	
TC/A.U.	:	2834	
Examiner	:	Mark O. Budd	
Docket No.	:	R.34720	
Customer No.	:	02119	

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Date: October 22, 2004

INFORMATION DISCLOSURE STATEMENT UNDER 37 CFR 1.97(b), AND EXPLANATION OF THE RELEVANCE OF THE CITED PRIOR ART

Sir:

The undersigned hereby requests that the prior art cited on the attached prior art statement be placed of record in the application file and considered by the examiner.

This citation of prior art is made under 37 CFR 1.97(b), since it is being filed before the mailing date of the first office action after the mailing of a request for continued examination under § **1.114**.

The relevance of the prior art cited on the attached form 1449 is as follows:

US 5,568,576

This patent teaches a waveguide device comprising a cladding layer having a refractive index n*cl*, a first waveguide having a refractive index ng (ng > n*cl*) formed on said cladding layer, and a second waveguide having a refractive index ncp (n*cp* > ng) formed on said first waveguide. The sectional shape of said second waveguide has a tapered structure in which a layer of thickness of said second waveguide reduces as the distance from the end face of the waveguide increases. A tapering angle θ in said tapered structure satisfies the following conditions:

$\theta a = \{90° - \arcsin(neff/ncp)\}/2$

$\theta < 2.0\,\theta a$

wherein n*eff* represents an effective refractive index of said first waveguide. This waveguide device has a high resistance against the deviation in the positions of the light exit face of an LD or an optical fiber and the light entrance face of a waveguide and thus enables an optical coupling at a high efficiency.

While this reference was sent to us by our client, the undersigned believes that US 5,568,676 was intended. This patent is already of record and has been considered by the examiner.

DE 197 12 923

This patent teaches a piezoelectric actuator that has at least one monolithic piezoelement of a piezoelectric material. This having a tubular form and a penetrating bore extending along a longitudinal direction surrounded by a tubular wall. An inner electrode is

provided on the inside of the tubular wall of each piezoelement. Correspondingly, an outer electrode is provided on the outside of the tubular wall of each piezoelement. When an electric voltage is applied between the inner electrode and the outer electrode, an electrical field is formed that is essentially aligned perpendicularly to the longitudinal direction of the tubular piezoelement. The electrical field effects a deformation of the piezoelement in its longitudinal direction in order to exert an actuation force in the longitudinal direction of the piezoelement.

DE 34 12 014 C1

This patent teaches a piezoceramic servo-drive for producing translational and angular movement, especially for application to ring laser mirrors, and including piezo discs arranged in a column. The discs are polarized in such a way that the direction of extension of the column and the direction of the electrical field lie in parallel. On one side, the discs are provided with a complete contact surface and on the other side are divided into electrically separate contact segments which are provided with separate electrical connections.

FR 2 702 895

This patent teaches a drive system using piezoelectric actuators including a housing (35) defining an inner surface (30) in which a moving assembly slides. This assembly consists of a longitudinal piezoelectric actuator (32) and two locking actuators (31, 33) interacting respectively with friction pads (34, 36) and is secured to an operating rod (37). The friction pads (34, 36) are configured in such a way as to occupy substantially the same axial position within the said housing (35).

GB 1 453 978

According to the teachings of this patent, in a linear stepping motor arrangement, a piezoelectric tube (1) containing fluid, e.g. silicone oil (14), is sealed at one end by a rigid wall (7) joined to a body (2) which may be magnetically clamped to a bed (4). The tube is sealed at the other end by a flexible diaphragm (9) joined to a further clamping body (3). When a voltage is applied to two electrodes (5, 6) via two leads (17, 16), with one body (2) clamped and the other body (3) unclamped, the length and diameter of the tube (1) are caused to vary. The volume inside the tube (1) is changed and as a consequence the diaphragm (9) and the unclamped body (3) execute a step movement. The unclamped body (3) may then be clamped and the other body (2) unclamped so that on switching off the voltage the tube relaxes to its former length. This causes a step movement at the other end of the tube. A rod (10) assists in the alignment of the system. In a modification (not illustrated) a third magnetic clamp is incorporated. In the embodiment of Fig. 3, movement of a diaphragm (29) causes a contacting ball (34) and rod (33) to produce movement of the corresponding clamping body (3). In the embodiments of Figs. 4 and 5, rods (48, 56) are mounted for motion relative to flexible ring seals (46, 47, 54, 55).

JP 1-1317552

This patent teaches a laminated piezoelectric transformer which is excellent in performance. The method discloses a vibration mode where the laminated piezoelectric transformer, composed of a support structure and lead wires, deteriorates less in the mechanical vibration coupling coefficient Qm. Piezoelectric ceramic disks (1) are polarized

to alternately change in a direction (8) of polarization in a thickness-wise direction. This excites a higher flexing vibration mode B (1, 3) (three node lines, one node circle). After the polarizing electrodes have been removed by etching, silver electrode paste is applied to both sides of each piezoelectric ceramic disk and baked. A hole (4) is bored in each piezoelectric ceramic disk at its center so as to lead out the lead wires (3) of an input/output section. The piezoelectric ceramic disks are laminated and bonded together with adhesive agent. Six intersections of the node lines (6) and a node circle (7) of a flexing vibration mode B (1, 3) are made to serve as supporting spots (5). The laminated piezoelectric ceramic disks are bonded to a board at the supporting spots, whereby a piezoelectric transformer is supported.

DE 196 26 671 C1

This patent teaches a high frequency piezoelectric power actuator apparatus with heat dissipation. The apparatus includes a stack of elementary polarized rings (1) of sintered lead zirconate-titanate ceramic with contact material (3) between them. The rings are bonded by thermally hardened epoxy resin to plates (2) of copper-bronze alloy 100 mu m thick with smaller central holes. Alternate plates are interconnected by copper wires (7) with dip-soldered joints (6). The portion of each plate protruding from the stack is in the form of a 270 degree segment of a circle with the same external diameter (D2), extending tangentially into a rounded 90 degree vertex. With an applied voltage of 1 kV, such a device has an expansion of 21 mu m and capacitance of 111 nF.

JP 6-64212

This patent teaches a system which enables many kinds of current supply controls by the combination of current supply states and to perform printing with accurate printing density by providing an external history control circuit. The circuit contains an editing circuit for editing history data on the basis of the signals from three one-line data buffers.
The printing data (2) is stored in either one of three one-line data buffers (4-6). History data is edited from the stored printing data by a history data editing circuit (8) and is to be sent to a data transmission circuit (9). The history data is sent to a shift register circuit (22) as edited printing data (12) and the data of one line is latched in the shift register circuit (22). The printing pulse corresponding to the history pattern of the edited printing data is applied to the heating element (18) of a thermal head (17) by a pulse width control circuit (7) to perform dot printing. This printing operation is performed seven times and, by the combination of current supply states at this time, sixty-four kinds of current supply controls are performed.

Examination of this application is respectfully requested.

Respectfully submitted,

Ronald E. Greigg
Registration No. 31,517
Attorney for Applicants

GREIGG & GREIGG, PLLC
1423 Powhatan Street, Suite One
Alexandria, VA 22314

Telephone: 703-838-5500
Facsimile: 703-838-5554

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INFORMATION DISCLOSURE CITATION

(Use several sheets if necessary)

Docket Number (Optional)	Application Number
R.34720	09/674,771
Applicant(s)	
Rudolf Heinz et al	
Filing Date	**Group Art Unit**
12-29-2000	2834

U.S. PATENT DOCUMENTS

*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
		5,568,579	10-22-1996	Kaoru Okaniwa			

U.S. PATENT APPLICATION PUBLICATIONS

*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE

FOREIGN PATENT DOCUMENTS

	REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation YES	Translation NO
		DE 197 12 923 A1	10-01-1998	Germany			✓	
		DE 34 12 014 C1	10-17-1985	Germany			✓	
		FR 2 702 895	09-23-1994	France				✓
		GB 1 453 978	10-27-1976	Great Britain			✓	
		JP 1-1317552	11-16-1999	Japan				✓

OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*

EXAMINER	DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP Section 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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		DE 196 26 671 C1	10-16-1997	Germany				✓
		JP 6-64212	03-08-1994	Japan				✓

OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*

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